



EAGLE Training Program

Module 7 – Testing Theory and Strategy

Learning Objectives

In this module, we will:

- Discuss why controls need to be tested
- Discuss how to develop a test strategy for your agency
- Discuss how to develop a test plan for an individual control
- Discuss how to test controls
- Discuss how to evaluate test results

Role of the Agency in the Evaluation Phase

- Each agency is required to perform an annual assessment of internal control over financial reporting.
- Each agency will need to test controls as part of this assessment to determine whether the controls are in place and operating as designed (i.e., operating effectiveness).

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Develop the Test Strategy

Testing occurs at two key stages of a review:

- Design effectiveness (Module 6)
 - Perform walkthrough (i.e., test of one)
 - Collect evidence

*Note: From walkthrough and knowledge of the process, if it is determined that the control is not designed effectively, **do not continue testing.***

- Operating effectiveness
 - Select key controls
 - Execute tests of controls

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Which Controls Should Be Tested?

Controls related to significant risks over financial reporting (accounts rated moderate and high):

- Entity-Level Controls
- IT-Dependent Manual and Application Controls
- End-User Computing Controls
- IT General Controls
- Process Controls

Note: In addition, a selection of complementary controls that assist in mitigating those risks should also be identified in the event that the controls referenced above are ineffective.

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Leveraging Entity-Level Controls

Process Risk Ranking	What to Test
High	Entity-Level and Transaction Controls
Moderate	Entity-Level and Selected Transaction Controls
Low	Entity-Level and Limited to No Transaction Controls

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Common Procedures For Testing

- Determine Nature, Extent and Timing (“NET”) of Testing:
 - Nature: How to test
 - Extent: How much to test
 - Timing: When to test

Note: Nature, Extent and Timing of testing should vary based on the assessed level of risk.

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Nature of Testing



Testing Techniques

- Typically, combination of techniques will be necessary.
- Since inquiry and observation alone generally will not provide sufficient evidence, tests of controls should also include reperformance or inspection of evidence resulting from the operation of the control.

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Testing Technique Examples

- Inquiry - discussing the operation of a reconciliation with an accounting clerk and assessing whether they have the appropriate level of understanding.
- Observation - observing the input and approval of a payment in the Accounts Payable department. This is a useful technique for assessing some IT dependent manual controls.
- Inspection - the examination of a purchase order form for evidence of review and appropriate authorization. This technique is used to determine whether manual controls are being performed as intended.
- Reperformance - the reperformance of a calculation to validate that it has been performed correctly; or for a reconciliation control, reperformance would consist of reviewing supporting documentation of selected items.
- Analytical Procedures - data-interrogation techniques which can be used to effectively analyze large volumes of transactions or data. These procedures can identify trends, statistical outliers, and impact analysis.

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Extent of Testing

- What factors should be considered when deciding the extent of testing?
 - How often the control is performed
 - Number of significant risks to which control relates
 - Nature of control (prevent or detect)
 - Type of control (manual, IT-dependent manual, or application)
 - Persuasiveness of the evidence
 - Sampling strategy
 - Testing period

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Extent of Testing

Select Sample Size

- The following matrix provides recommended sample size guidance:

Frequency of Control	Estimated Population	Range of Sample Size	Process Risk		
			Low	Moderate	High
More than daily/ Continuous	More than 250	25-40	25	30	40
Daily	61-250	15-25	15	20	25
Weekly	40-60	5-10	5	7	10
Bi-Weekly/ Semi-Monthly	20-30	3-7	3	5	7
Monthly	12	2-4	2	3	4
Quarterly	4	2	2	2	2
Annually	1	1	1	1	1
Automated	N/A	1	1	1	1

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See Handout 1



Timing of Testing

- When to test and the time period to be covered depends on:
 - Nature of the control
 - Frequency with which specific control operates
 - Matter of judgment
- Remember: The purpose is to evaluate controls over a period of time that is adequate to determine whether controls are operating effectively.

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Writing the Test Plan

The test plan should include:

- Control description
- Control reference
- Objective of test
- Testing procedures
- Results
- Conclusion
- Issue raised
- WP reference

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Example Test Plan Matrix

Significant Process	Process Risk Rating	Control Description	Control Reference #	Objective of Test	Testing Procedures	Results	Conclusion	Issue Raised?	Testing w/p ref
Purchasing	Moderate	Invoices and receipts are system restricted from processing unless approved by the applicable buyer supervisor. System approval hierarchies are maintained by the IT Department.	AP5	Purchases are appropriately authorized.	Review configuration of approval routing within Application XYZ. Attempt to complete routing task without appropriate approvals and note results.	No exceptions noted.	Effective	No	AP Leadsheet 1
Processing Invoices	High	All Invoices are approved by the AP Clerk prior to validation.	AP8	Purchases are appropriately authorized.	Select invoices paid during the year. Confirm that approvals for all invoices paid are consistent with the signature log maintained by the AP Department.	Exceptions noted	Ineffective	Yes	AP Leadsheet 2

See Handout 2

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Writing the Test Leadsheet

The test leadsheet should include:

- Objective of the test
- Source of sample (reports/data)
- Time period
- Population
- Sample approach
- Test attributes

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Example Test Leadsheet Matrix

Document:	Testing Leadsheet	Performed by:	KX Smith
Entity:	Agency ABC	Reviewed by:	KX Thomas
Reporting Date:	6/30/XX		
Financial Statement Account:	Current and Noncurrent Liabilities		
Significant Process:	Update to GL		
Process Risk Rating:	Moderate		
Control Reference #:	AP13		
Control Description:	GL accounts and AP subledgers are reconciled on a monthly basis by the AP Accountant. Reconciliations are reviewed and approved by the AP Supervisor.		
Control Frequency:	Monthly		
Automated, Manual or Both:	IT-dependent Manual		
Prevent or Detect:	Detect		
Control/Process Owner:	AP Accountant		
Estimated Population:	12		
Sample Selection Methodology:	Random		
Sample Size:	8		
Source Test Documents:	Accounts Payable Reconciliations		
Procedures / Testing Discussion:	Randomly selected 4 months from FY 2008 and obtained reconciliation of AP subledger to GL from AP Accountant.		
Definition of an Exception:	An exception will be noted under any of the following conditions: No evidence of AP Supervisor's sign-off on AP Reconciliation No evidence of reconciling items for significant/unexplained differences		

NOTE: The header fields below in gray should be customized for the items you are testing. If you have invoices, you should change the header and list the invoice numbers. If you have multiple attributes you should add or delete columns, as necessary.

Sample No.	Sample	Month	A	B	C	D	E	W/P ref
1	1/31/2008	January	x	x	x	x	x	
2	3/31/2008	March	x	x	x	x	x	
3	9/30/2007	September	x	x	x	x	x	o. Note 2
4	11/30/2007	November	x	o. Note 1	x	x	x	

Attributes:	A	Reconciliation between AP subledger ledger to GL performed by AP Supervisor.
	B	Evidence of AP Supervisor sign-off.
	C	Amount in AP Reconciliation ties to AP Subledger detail.
	D	Amount in AP Reconciliation ties to Trial Balance.
	E	Evidence of reconciling items for significant/unexplained differences.

Tickmark Legend:	x	Attribute satisfied without exception.
	o	Attribute not satisfied.
	Note 1	AP Supervisor did not sign-off on the AP Reconciliation.
	Note 2	No evidence to support reconciling items.

16 Results: For one of the four selections, no evidence of review existed. For one of the four selections, no supporting documentation for reconciling items existed.

See Handout 3



Execute Tests

- Select sample before testing starts
 - Do not modify or manipulate once sample is selected
- Describe test steps
- Test steps should link directly to identified risks.
- Reference workpapers where detailed testing results are contained.

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Document Testing Results

- Purpose of testing work papers:
 - Need to be able to reproduce test
 - Sufficiency of evidence
- As such, testing work papers should include:
 - Test objective
 - Sample size and selection method, including population
 - Procedures performed
 - Source of documentation
 - Definition of an exception
 - Results of test including exceptions identified

Test results should stand on their own, and a prudent person should be able to review and understand the results.

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Evaluate Results

- Types of results
 - No exception identified
 - Exception identified
- What is a control exception?
 - Control does not operate as intended.
- Evidence that a control is not operating as intended:
 - Not performed
 - Performed late or inaccurately
 - Control can be overridden.
 - Lack of evidence
 - Item could not be located.

See Case Study

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Investigating Control Exceptions

- All control exceptions should be investigated.
- Need to determine nature of control exception:
 - Is the exception pervasive or a one-time occurrence?
 - Does the exception apply to the whole population or particular segments?
 - When did the exception occur?
 - Is the exception a result of a performance issue or lack of documentation?
 - Is your understanding of the control correct?

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Options When Control Exceptions Found

- Extend testing (in anticipation of not finding another internal control exception)
- Consider whether a compensating control is available to test
- Deem the control ineffective
- Consider control remediation and retest the control

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Documenting Issues - How to Document

- Use an Issue Summary Template:
 - Issue
 - Risk/Implication
 - Recommendation
 - Management Response

See Case Study

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Summary

In this module, we:

- Discussed implementing a test strategy
- Discussed developing a testing plan and leadsheet for an individual control
- Discussed testing controls and evaluating test results

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Appendix

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Sampling Strategies and Methods

- Strategies
 - Stratified sampling
 - Discovery or Attribute sampling
- Methods
 - Statistical
 - Random
 - Systematic (Monetary Unit Sampling)
 - Non-Statistical
 - Haphazard
 - Judgmental

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EAGLE Training Program

Break

Recap Summary

- **Module 6:**
 - We discussed how to document a process by applying flowcharts, process narratives and Risk and Control Matrices.
 - We discussed how to perform a walkthrough.
 - We discussed consideration for central management agencies and third-party service organizations.
- **Module 7:**
 - We discussed developing and implementing a testing strategy.
 - We discussed testing controls and evaluating test results for operating effectiveness.